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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,982	08/22/2003	Dean S. Thompson	3005669-0003	8601
40947	7590	08/05/2008		
rudoler & derosa llc ATTN: DOCKET CLERK 2 BALA PLAZA, SUITE 300 BALA CYNWYD, PA 19004			EXAMINER KENNEDY, ADRIAN L	
			ART UNIT	PAPER NUMBER
			2129	
			MAIL DATE	DELIVERY MODE
			08/05/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/645,982	<b>Applicant(s)</b> THOMPSON, DEAN S.	
	<b>Examiner</b> ADRIAN L. KENNEDY	<b>Art Unit</b> 2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/22/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

In view of the Appeal Brief filed on January 22, 2008, PROSECUTION IS HEREBY REOPENED. A new grounds of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

***Examiner's Detailed Office Action***

1. This Office Action is responsive to **Appeal** filed **May 27, 2008**.
2. This action is hereby made **Non-Final**.
3. **Claims 1-8 and 10-20** will be examined.

***Claim Objections***

4. Claims 2-4 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The examiner has found that claims 2-4 only recite limitation already found in independent claim 1, and are therefore not further limiting. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The examiner fails to comprehend how one describes (i.e. defines) a method that is a self-describing method. It would be of great assistance to the prosecution of the applicant's claimed invention if the applicant would describe how one "[describes] at least one self-describing

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method”, because as the examiner interprets the claim language, a "self-describing method" would need no “describing” because its description would be implicit. Furthermore, the examiner has not examined claims 16-19 with regard to the prior art due to an inability to determine the scope of the claims.

***Claim Rejections - 35 USC § 101***

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-22 fail to (2) transform the underlying subject matter to a different state or thing. Additionally, the applicant’s claimed invention fails to indicate a “concrete, useful and tangible result” in claimed invention.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-8, 10-14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akkiraju et al. (USPubN 2001/0013027, referred to as Akkiraju).

Regarding claim 1 and 20:

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Akkiraju teaches,

defining a set of traits in which each trait characterizes a portion of a solution algorithm to the problem (Akkiraju: ¶ 0023; Examiner's Note(EN): The examiner takes the position that in not further defining the claimed "traits" in the claimed invention, or how the claimed "traits" "characterize" a portion of the solution, that the claimed "traits" read on the decompositions of candidate solutions as taught by Akkiraju. Furthermore, the examiner takes the position that it would have been obvious to one of ordinary skill in the art that a decomposition of a candidate solution would inherently "characterize" a portion of said candidate solution.);

defining a programming interface for at least one of the traits (Akkiraju: ¶ 0024; EN: The examiner takes the position that while Akkiraju does not explicitly recite defining a "programming interface", the defining of a "programming interface" is inherently defined for the decompositions taught by Akkiraju. This position is supported by the fact that at the time of the applicant's claimed invention it was of ordinary skill in the art that a "programming interface" is defined when a method is computer implemented (e.g. using software), depending on the computer, programming language, library, and/or services being used to implement said method, and Akkiraju teaching that his invention is computer implemented.);

providing an implementation for at least one of the defined programming interfaces (Akkiraju: ¶ 0024; EN: The examiner takes the position that the applicant's claimed "providing" of an implementation is inherent in the invention of Akkiraju. This position is supported by the fact that the computer implemented method of Akkiraju contains

"programming interfaces", and "programming interfaces" inherently have explicitly or implicitly defined implementations for each of the said "interfaces". This position is further supported by the fact that it was obvious to one of ordinary skill in the art at the time of applicant's claimed invention that "programming interfaces" are nothing more than function or procedure declarations and that function and procedure declarations inherently have implementations. Finally, the examiner has found that in not distinctly claiming what the "implementation" includes, that the "implementation" could be nothing more than providing the code for the "defined programming interfaces", which would have been obvious to one of ordinary skill in the art at the time of invention when teaching (or suggesting) a computer implemented method.);

specifying a subtrait associated with at least one of the traits or the implementations (Akkiraju: ¶ 0024; EN: Having not further defined the applicant's claimed "subtrait" in the claimed invention, the examiner has found that the claimed "subtraits" read on the sub-problems taught by Akkiraju. Additionally, the examiner asserts that it would have been obvious to one of ordinary skill in the art at the time invention that the sub-problems (i.e. "subtraits") taught by Akkiraju are associated with the problems taught in his invention.);

selecting a top-level trait that characterizes a solution to the problem (Akkiraju: ¶ 0031; EN: Having not further defined the applicant's claimed "top-level trait" in the claimed invention, the examiner has found that the claimed "top-level trait" reads on the problem taught by Akkiraju. Additionally, the examiner takes the position that the claimed "top-level" is no different from the previously claimed "trait").);

selecting a top-level implementation for the top-level trait (EN: The examiner takes the position that a "top-level trait" inherently has a "top-level implementation". This position is based on the applicant previously claiming that a "trait" has an "implementation". Additionally, the examiner asserts that the applicant's claimed "top-level trait" would have been obvious to one of ordinary skill in the art, in light of Akkiraju teaching a problem having sub-problems and it being inherent that a problem with sub-problems would be a "top level" problem. Finally, the examiner previously established that an "implementation" is inherent in the invention of Akkiraju.);

selecting an implementation for each subtrait required for the top-level trait or the top-level implementation (EN: The examiner takes the position that selecting an "implementation" for the "trait" is inherent in the invention of Akkiraju. This position is supported by the examiner assertion that a "subtrait" reads on the sub-problems taught by Akkiraju, and the previously presented argument that all problems whether they are "top-level" or sub-problems, inherently have an "implementation".);

recursively selecting an implementation for each subtrait associated with at least one of the traits or the implementations in order to construct a trait hierarchy (Akkiraju: ¶ 0024; EN: The examiner takes the position that the applicant's claimed process of "recursively selecting" reads on the process of decomposing a problem into a first set of sub-problems, and then decomposing said first set of sub-problem into a second set of sub-problems, as taught by Akkiraju. Furthermore, while Akkiraju does not explicitly recite the construction of problem hierarchy (i.e. "trait hierarchy"), the examiner asserts that it would have been obvious to one of ordinary skill in the art that sub-problems



decomposed from a higher level of sub-problems, which were decomposed from a problem would inherently form a problem hierarchy.) that forms a computer program for solving the problem (Akkiraju: ¶ 0021 and 0024; EN: The examiner takes the position that it would have been obvious to one of ordinary skill in the art at the time invention that the method taught by Akkiraju inherently forms a computer program. This position is based on Akkiraju teaching that his method is computer implemented.).

It would have been obvious to one of ordinary skill in the art at the time of invention to apply the optimization method of Akkiraju to the system and method of optimizing taught by Thompson, for the purpose solving a problem (Akkiraju: ¶ 0001).

Regarding claim 2:

Akkiraju teaches,

(original) The computer program constructing method wherein the at least one trait comprises a plurality of traits (Akkiraju: ¶ 0023 and 0024; EN: The examiner takes the position that the applicant's claiming that a "trait" comprises a plurality of "traits", reads on the teaching of Akkiraju that a problem is decomposed into a plurality of sub-problems).

Regarding claim 3:

Akkiraju teaches,

(original) The computer program constructing method wherein a computer programming interface is defined for each of the traits (EN: The examiner previous established that

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defining a "programming interface" would have been inherent in the invention of Akkiraju.).

Regarding claim 4:

Akkiraju teaches,

(original) The computer program constructing method wherein an implementation is provided for each computer programming interface (EN: The examiner previously established that providing "an implementation") would have been inherent in the invention of Akkiraju.).

Regarding claim 5:

Akkiraju teaches,

(original) The computer program constructing method wherein the subtrait comprises a plurality of subtraits (Akkiraju: ¶ 0024; EN: The examiner takes the position that the applicant's claiming of a "subtrait" comprising a plurality of "subtraits" would have been obvious to one of ordinary skill in the art, in light of Akkiraju teaching that his sub-problem are decomposed into a plurality of sub-problems.).

Regarding claim 6:

Akkiraju teaches,

(original) The computer program constructing method wherein the subtrait comprises a plurality of subtraits (Akkiraju: ¶ 0024; EN: The examiner takes the position that the

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applicant's claiming of a "subtrait" comprising a plurality of "subtraits" would have been obvious to one of ordinary skill in the art, in light of Akkiraju teach that his sub-problem are decomposed into a plurality of sub-problems.).

Regarding claim 7:

Akkiraju teaches,

(original) The computer program constructing method wherein the top-level trait comprises a plurality of top-level traits (Akkiraju: EN: The examiner takes the position that if a "top-level trait" is below another "top-level trait" the second "top level trait" it is no longer a "top-level trait". If the applicant wishes to disagree with the examiner's position, the examiner respectfully requests that the applicant explain his or her position in subsequent communications.).

Regarding claim 8:

Akkiraju teaches,

(original) The computer program constructing method wherein the top-level trait comprises a plurality of top-level traits (Akkiraju: EN: The examiner takes the position that if a "top-level trait" is below another "top-level trait" the second "top level trait" it is no longer a "top-level trait". If the applicant wishes to disagree with the examiner's position, the examiner respectfully requests that the applicant explain his or her position in subsequent communications.).

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Regarding claim 10:

Akkiraju teaches,

(original) The computer program constructing method wherein the subtraits are associated with at least one of the traits, the implementation, or both (Akkiraju: EN: The examiner previously established that the applicant's "subtraits" read on the sub-problems taught by Akkiraju, and that said sub-problem are inherently "associated with" problems.).

Regarding claim 11:

Akkiraju teaches,

(original) The computer program constructing method wherein the subtrait is one of the defined set of traits (Akkiraju: EN: The examiner takes the position that it would have been obvious to one of ordinary skill in the art at the time of invention, that the claimed "subtrait" is one of the defined "traits". This position is based on the fact that the applicant did not previously define the "subtrait", so both the "subtrait" and "top-level" trait would have to be one of the previously defined "traits". Furthermore, the examiner asserts that the applicant's claimed "subtrait" reads on the sub-problem associated with the defined problem, as taught by Akkiraju.).

Regarding claim 12:

Akkiraju teaches,

(original) The computer program constructing method wherein the subtraits associated with the traits, the implementation, or both (Akkiraju: EN: The examiner previously established that the applicant's "subtraits" read on the sub-problems taught by Akkiraju, and that said sub-problem are inherently "associated with" problems.).

Regarding claim 13:

Akkiraju teaches,

implementing an evaluation module that executes a constructed computer program in order to determine its effectiveness in solving the problem (Akkiraju: EN: The examiner takes the position that the execution of a constructed computer program would have been inherent in the invention of Akkiraju in light of him teaching that his method is computer implemented.); and

applying an optimization technique that carries out the steps of claim 1 to generate at least one computer program that solves the problem, and that uses feedback from the evaluation module to generate at least one additional computer program that better solves the problem (Akkiraju: ¶ 0035; EN: The examiner takes the position that the applicant's claimed use of optimization and said optimization using feedback, reads on the use of an optimization and said optimization using the correctness objective function for the various sub-problems when generating the sub-problem and sub-sub-problem.).

Regarding claim 14:

Akkiraju teaches,

(original) The computer program constructing method wherein the optimization technique is selected from the group consisting of simulated annealing, an evolutionary algorithm, and a particle swarm optimization (Akkiraju: ¶ 0088).

### ***Response to Arguments***

Applicant's arguments filed on May 27, 2008 have been fully considered but are found to be non-persuasive. The unpersuasive arguments made by the Applicant are stated below:

In reference to Applicant's argument

Claims 1 and 20 are directed to “constructing at least one computer program that solves a problem” by constructing an accurate and detailed design of the problem decomposition “in order to construct a trait hierarchy that forms a computer program for solving the problem” ***before an optimization method can be applied to the problem.***

Examiner's response:

The examiner has considered the applicant's above arguments and has respectfully found that there is nothing in the claimed invention that limits the problem decomposition to occurring only "before an optimization method can be applied to the problem".

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Michalewicz (USPubN 2001/0051936) is cited for his system and method for determining an optimum solution to a problem. Trif et al. (USPN 5,870,731) is cited for his adaptive problem solving method. Gounares et al. (USPN 6,055, 690) is cited for his method for adaptively solving problems.

Examiner's Opinion:

The examiner has considered the applicant's arguments in light of the claimed invention. Furthermore, the examiner respectfully reminds the applicant that “**during examination, the claims must be interpreted as broadly as their terms reasonably allow**”. (MPEP 2111.01 [R-5] I)

It is the goal of the Examiner to move the applicant's claimed invention towards allowability. However, as presently claimed, the applicant's claimed invention is substantially broad and is broad enough to read on the prior art of record. The examiner respectfully request that the applicant consider what the invention is, and where the line between the prior art (cited by the examiner and/or known by the applicant) and the applicant's intended invention lay. This request is made so the examiner can help the applicant arrive at claim language that not only traverses the language taught in the presently pending and/or previously disclosed prior art, but also traverses concepts taught (or suggested) in prior art known by the examiner and/or applicant which has not been cited. Also, the examiner is more than willing to have an interview with applicant, but requests that the applicant disclose what he or she considers to be the most inventive portion of the claimed and/or disclosed invention.

- Regarding 101, the examiner has found that the applicant's claimed invention of independent claims 1 and 20 do not produce a "useful, concrete, and tangible result".

This position is based on the fact that the claims recite numerous manipulations of data (i.e. "defining", "selecting", "providing", and "specifying"), but does not indicate that a real world result is produced. Also, while "solving [a] problem" using a "constructed trait hierarchy that forms a computer program" is a practical application, "constructing a trait hierarchy that forms a computer program" is not a tangible result. This position is based on the fact that the "construction" process, which only recursively selects pre-existing pieces (i.e. the previously selected, defined and specified, "traits", "implementation" and "interfaces"), does not actually create anything that is a tangible result, and is therefore a pure manipulation of data and as a result software per se.

Additionally, due to the breadth of scope of the claimed invention (of the independent claims), it appears as though no program is ever constructed. This position is based on the fact that all the applicant has done in the independent claims is define portions (and sub-portions) of the solution algorithm to the problem, but has not provide any language to indicate that a "program that solves a problem" is ever constructed or that any effort is made to actually use the said portions (and sub-portions) of the solution algorithm.

- Regarding the defining of "traits", "subtraits", and "top-level traits", the examiner takes the position that if you define a "subtrait", that "subtrait", you inherently have to have a "top-level trait". Furthermore, is claiming that each "trait" has a "programming interface", and an "implementation", it is inherent that "top-level traits" and "subtraits" have "programming interfaces" and "implementations". Finally, in not claiming the definition or creation of a "top-level trait", the examiner asserts that the previously



defined "trait" is the same as the "top-level trait".

- Regarding the applicant's claimed use of a "trait", the examiner has not been able to determine from the claimed invention which "portion" of the solution algorithm the "traits" "characterize".

- Regarding the applicant's claimed "system" (of claim 20), the examiner takes the position that the claimed system is a software system and not a computer hardware system.

- Regarding the claimed invention in general, it appears that the applicant is only attempting to claim the process of programming the software representation of the problem to be solved, but does not actually solve the problem. Therefore examiner respectfully reminds the applicant that taking an abstract process and putting it on a computer does not make it patent eligible subject matter. This is due to the fact that the abstract process has to, on its own, produce a real world result.

Should the applicant choose to amend, the Examiner respectfully suggests that the applicant further indicate what how the claimed information relates to the real world (i.e. a practical application and tangible result) in the body of the claimed invention, what type of problems are being solved, and include method steps that indicate something is actually created (in lieu of selecting, defining and specifying). (The previously cited suggestions are not a recitation of allowable subject matter, but are rather subject matter disclosed/claimed by the applicant which will help further distinguish the claimed invention from the prior art. Furthermore, any amendment will require further searching

of the prior art.).

Claims 1-8 and 10-20 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adrian L. Kennedy whose telephone number is (571) 270-1505. The examiner can normally be reached on Mon -Fri 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ALK/

/David R Vincent/

Supervisory Patent Examiner,  
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